
Science Flight Report

Operation IceBridge Arctic 2012



Flight: F31
Mission: Jakobshavn Basin 01

Flight Report Summary

Aircraft	P-3B (N426NA)
Flight Number	32
Flight Request	12P006
Date	Sunday, April 29, 2012 (Z)
Purpose of Flight	Operation IceBridge Mission Jakobshavn Basin 01
Take off time	10:30 Zulu from Kangerlussuaq (BGSF)
Landing time	18:24 Zulu at Kangerlussuaq (BGSF)
Flight Hours	8.0 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None.
Accomplishments	<ul style="list-style-type: none">• Low-altitude survey (1,500) of glaciers and ice sheet profiles.• Completed entire mission as planned.• ATM, snow, Ku-band, accumulation radar, MCoRDS gravimeter, magnetometer, DMS and KT-19 skin temperature sensor were operated on the survey lines.• Pitch and roll maneuvers for snow and Ku-band radar.• Ramp pass at 2,000 ft AGL at Kangerlussuaq.
Geographic Keywords	Jakobshavn Glacier
Satellite Tracks	ICESat tracks 0323, 0166, 0300, 0047, 0285, 0070, 0204, 0085, 1320, 1282, 0166, 0189, 0032, 0151, and 1305.
Repeat Mission	2009, 2010, 2011

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	79 GB	None
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.8 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	778 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	778 GB	None
Accumulation Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	196 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	111 GB	None
KT-19 Skin Temp.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12 MB	None
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.5 GB	None
Magnetometer	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	560 MB	None

Mission Report (Michael Studinger, Mission Scientist)

Today's mission was put together by merging ICESat lines over Jakobshavn Glacier from the mission plans Jakobshavn-Eqip-Store and Jakobshavn 01. This is a repeat of 2009 and 2010 and 2011 IceBridge missions.

The weather in the area was better than expected. We had hoped that the low fog would dissolve during the day with increase sun intensity – and it did.

Individual instrument reports from experimenters on board the aircraft:

ATM: Both ATM systems worked well and collected good data along the entire line in mostly cloud free conditions. ATM collected a total of 7.6 hours of science data with 98% coverage.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars worked well.

Accumulation radar: Worked well today.

Gravimeter: Worked well.

Magnetometer: Worked well and used the SGL data logger today without problems.

DMS: DMS worked well and collected 18332 frames. Half way through the mission remnants from the de-icing fluid obscured the DMS window.

KT-19 skin temperature sensor: System worked well.

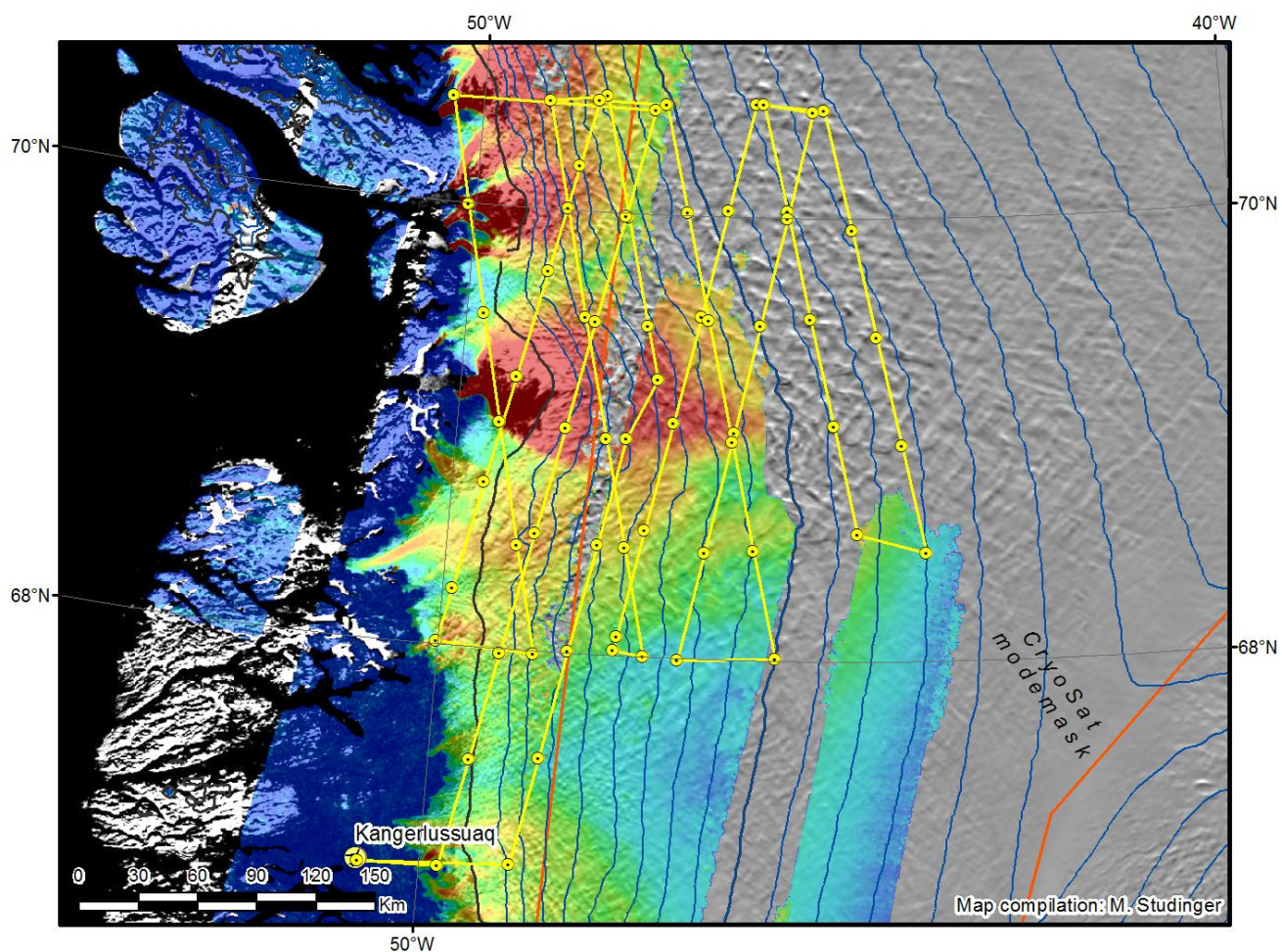


Figure 1: Today's mission plan (yellow).

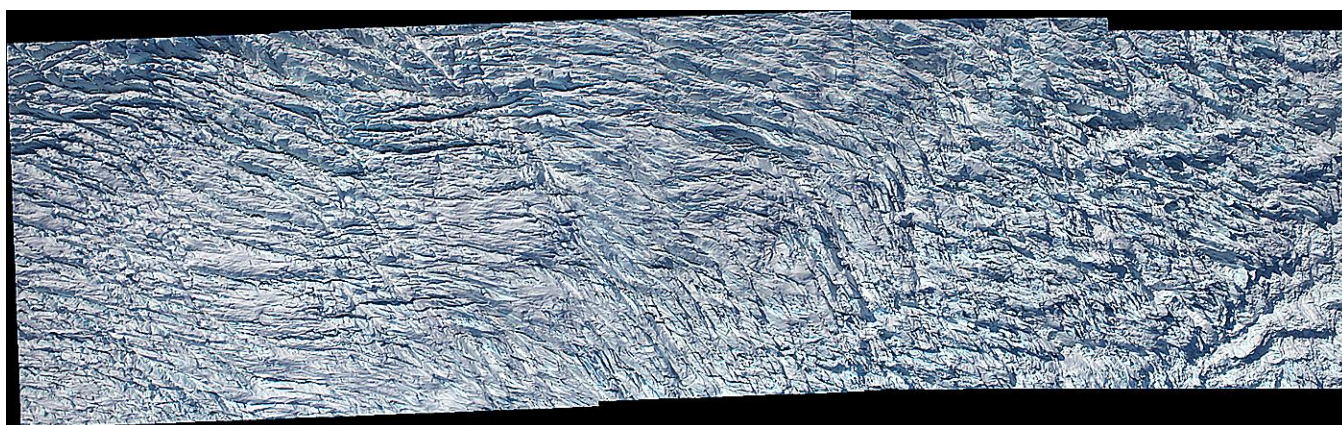


Figure 2: DMS mosaic of a Jakobshavn Glacier. DMS/James Jacobson.